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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TOSHIHIKO SHIRASAGI and SHINJI MINEGISHI

Appeal 2011-002709
Application 10/579,211
Technology Center 1700

Oral Hearing Held: January 11, 2012

Before CHUNG K. PAK, LINDA M. GAUDETTE, and
KAREN M. HASTINGS, *Administrative Patent Judges.*

APPEARANCES:

ON BEHALF OF THE APPELLANT:

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The above-entitled matter came on for hearing on Wednesday, January 11, 2012, commencing at 1:06 p.m., at the U.S. Patent and

Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Dawn A. Brown, Notary Public.

PROCEEDINGS

THE USHER: Calender Number 34, Appeal Number 2011-2709. Mr. Dutton.

JUDGE PAK: Mr. Dutton, welcome.

MR. DUTTON: Welcome. Good afternoon.

JUDGE PAK: We have a court reporter here today. You may give her your business card. She is going to transcribe the entire hearing, and all the arguments you make will become a part of the record.

You have 20 minutes to argue your case, and you may start anytime you wish.

MR. DUTTON: Okay. Thank you, Your Honors. May it please the Court. My name is Brian Dutton. I am counsel for Sony Corporation before this court today.

The issue before this court is whether the Examiner erred in rejecting the claims presently on appeal. At least for the following reasons identified within the Appellants' Brief and the Reply Brief. We believe that the findings by the Examiner are unsupported by substantial evidence and are erroneous as a result.

We believe that the Examiner erred in rejecting claims 1, 4 through 7 and 10 under 35 U.S.C. 103 as allegedly being unpatentable Kouchiyama, Saito, Yamada and Lee.

I now wish to amplify those arguments that are present within the Appellants' Brief and the Reply Brief.

Claims 1, 6, 7 and 10, standing or falling together, is the first grouping of claims argued in the Briefs. These claims provide for an organic resist layer being an incomplete oxide of a transition metal with the oxygen concentration of the organic resist layer being increased towards the surface of the substrate from the surface of the inorganic resist layer.

Regarding the meaning of the term incomplete oxide of a transition metal within the claims on appeal, the Specification for the claims on appeal at page 4, lines 23 through 26, describes an incomplete oxide of a transition metal being an oxide whose oxygen content is slightly deviated from stoichiometry composition of the transition metal oxide.

The Examiner relies principally upon Kouchiyama, Saito and Yamada in rejection of these claims. Here we wish to make the following points.

Point one, while Kouchiyama discloses the presence of an inorganic resistant material, we argued in our Briefs that Kouchiyama does not teach the oxygen concentration of an inorganic resist layer being increased towards the surface of the substrate from the surface of the inorganic resist layer.

The Examiner agreed with this argument. Instead, the Examiner referred to Saito to account for this claimed feature that the Examiner agrees is deficient from within Kouchiyama.

Turning to Saito, column 2, lines 32 through 38, of that reference refers to laminates of tellurium or tellurium suboxide and/or a tellurium dioxide.

However, being that the tellurium dioxide can be found in nature in the form of, for example, the telluride, the skilled artisan would not have

recognized the tellurium oxide -- dioxide of Saito to be an incomplete oxide of tellurium.

Furthermore, we argued in our Briefs that the tellurium oxide, such as that which is present within Saito, is not an oxide of a transition metal. The Examiner agreed with this argument.

Thus far, the Examiner has admitted that Saito does not teach an oxide of a transition metal and that Kouchiyama does not teach the oxygen within the inorganic resist layer having the claimed oxygen concentration. We believe that these admissions are of themselves a basis of reversible error made by the Examiner in the rejection of the claims.

Later in these remarks, we will address the Yamada reference.

JUDGE PAK: Counsel, the Examiner takes the position that the -- although tellurium suboxide is not transitional metal oxide because it is used for the same purpose, there is reason to believe that the advantages you gain from providing the oxygen concentration in the same manner as in the tellurium oxide would be expected from using the transitional metal oxide.

MR. DUTTON: Thank you for the question. That is a good question. And in response to that question, we have argued in a Brief that what we are referring to is the fact that the oxygen content in this inorganic resist layer is increased towards the surface of the substrate, which is the point that we're trying to make and which is the point that we're trying to hammer home. That the references in their entirety do not teach this particular feature.

As our --

JUDGE HASTINGS: Are you disputing that Saito teaches -- although it is with telluride oxide, it does teach -- at least the Examiner found and I

don't think you disputed this in particular -- it does teach that the oxide content in the telluride oxide increases towards the surface of the substrate?

MR. DUTTON: As it turns out, the Saito reference, which is the point that we were going to get to, that reference, it does not teach that at all. As a matter of fact, if you look at the claims, the abstract and the entire teachings of that reference, the exact opposite occurs, which the Examiner also notes on page 5.

JUDGE HASTINGS: The Examiner notes example 4 -- not column 4.

MR. DUTTON: Column 8.

JUDGE HASTINGS: It teaches either/or. It teaches it can go either/or. It can either increase towards the substrate or decrease towards the substrate. It teaches that in that example on column 8.

MR. DUTTON: Uh-huh.

JUDGE HASTINGS: And I don't see that you disputed that in either of your Briefs.

MR. DUTTON: What we talk about in our Briefs -- and I guess in reviewing the Briefs we did not actually draw that out, that particular language specifically -- but the entirety of our Briefs in its context refers to this whole concept of this absence within Saito.

And the thing about this reference is that the scheme within Saito itself relies upon an increase of the oxygen concentration from the substrate all the way out to the outer edge or the outer layer of that recording layer.

The reverse is not true within Saito. Even this example that the Examiner has cited, you know, first off, there is somewhat of a discrepancy in the language of that reference because that reference at column 8, between

39 and 45, describes an increase in value X, but it also refers to decreasing the value of X that would result in the decrease.

So those -- when you read it together, it is somewhat contradictory in that you can both increase the value of the oxygen concentration while also decreasing the value of the oxygen concentration.

And the other point in that is that that section, which the Examiner has cited and relies upon, refers to this oxygen concentration being less than .01; however, that talks about the oxygen concentration in the formed recording layer. It does not refer to how that oxygen concentration or the gradient of that oxygen concentration in any layer above or below.

Instead, looking at this entire passage, what happens is that this low oxygen concentration layer is formed within Saito, then the oxygen is increased until you get to an oxygen concentration to form a telluride dioxide.

So you go from primarily very little oxygen all the way out to the telluride dioxide. And that occurs in each and every one of the examples in Saito. It also occurs in the abstract in Saito. It also occurs in the claims of Saito. This is what Saito is.

It turns out that our claims are the exact opposite. The concentration is decreased as you go out from the substrate --

JUDGE HASTINGS: Is it correct that you did not bring out this point in either of your Briefs?

MR. DUTTON: I guess being able to point and say this line here, paragraph, no, I would not be able to say that.

But now looking at the Briefs in the entirety of what we're describing and what we're arguing, you know, I think that it could be looked at and determined that our position is found within the Briefs.

But the whole point is that the reference itself does not have what the Examiner is talking about because the entire scheme is an exact reversal of what we're actually claiming.

I guess -- and that goes to point two of our remarks, which the Examiner refers to Saito for the teaching of an oxygen concentration within the inorganic resist layer of the claimed oxygen concentration. And specifically on page 5 of the Examiner's Answer, the Examiner refers to example 4 of Saito.

Example 4 refers to figure 3 of that reference, which depicts the tellurium oxide film 10 between tellurium dioxide film 11 and a metal tellurium film oxide 12.

In this example, Saito describes the oxygen concentration of the tellurium dioxide film 11 to be 2.0 while describing the oxygen composition of the metal of tellurium film 12 to be zero.

So again, we have that concept of the zero at the substrate increasing as you get away from the substrate. Our claims having the exact opposite. Increase as you get towards the substrate.

The claims on appeal provide for this increase of the oxygen concentration towards the surface of the substrate. However, upon review of example 4 in Saito, the skilled artisan would have readily concluded that the oxygen concentration 2.0 of a tellurium dioxide film and the metal tellurium film 12 in figure 3 would have resulted in the oxygen concentration being decreased, not increased, towards the substrate.

This conclusion is confirmed in Saito at columns 8, lines 19 through 21, which states that -- and again, this is part of example 4, which this reference does state. It states that X is varied from zero in a thick-wise direction from the surface of the substrate. And this is what Saito says for that particular example that the Examiner has cited.

JUDGE HASTINGS: Yes. But then it goes on to say -- and I'm still struggling to understand it, and you did not dispute this in your Briefs at the time -- it says according to another example, you basically do the opposite is what the Examiner said that this said. And it does appear to say that to me superficially, but we will consider your remarks on that.

MR. DUTTON: Well, okay. Thank you. And -- thank you very much because that appears to be the entire lynchpin within this entire rejection itself. This particular point that we're discussing it seems to be the one piece that holds the entire rejection together.

This other example here -- and I guess thank you for raising this -- because this of -- another example, it first refers to the deposition of a tellurium dioxide layer.

Now, this tellurium dioxide occurs naturally in nature. So it is not -- I don't think the skilled artisan would have considered this dioxide to be an incomplete oxide.

So what happens in this particular layer, I think it would be beyond the scope of the claim in that it is something that is other than an incomplete oxide.

That said, this portion here goes on to talk about the proportion value X of the oxygen component in the film is reduced to a value less than .1.

What it doesn't say -- it just talks about that particular recording layer and what the oxygen concentration of that particular layer is.

That between this dioxide of the base layer and the subsequent layer, there now is a difference between the oxygen concentration. But recall, again, this dioxide is not, we don't believe, an incomplete oxidation because in its stable form you would find it in nature.

So therefore, we have to look at this underlying recording layer. With that underlying recording layer, all that this second example refers to is what the concentration of -- the oxygen concentration within that formed recording layer, within that particular layer.

And sure, it talks about a decrease and a stepwise fashion of the gases or the conditions in order to -- when forming that layer; however, it does not say what the particular concentration of the oxide in that particular layer is.

The only thing that we have is that it is less than 1.0. We don't talk about the gradients between the two layers or what happens within that particular layer.

Then this example goes on to say that the oxygen concentration is increased as you leave the substrate and as you go towards the surface.

So it still has that same sort of concept and that same sort of pattern that is throughout each and every one of the other examples within Saito and that is also within the abstract of Saito and it is also within the claims of Saito. This is what the concept of Saito is, is the increase and not the decrease of the oxygen concentration as you approach the substrate.

And I guess with that, then, I think I would like to perhaps just move on quickly to our second grouping, which is claims 4 and 5 which talks about the sputtering.

And with these claims, they refer to a sputtering method in which the oxygen concentration of the inorganic resist layer is made different in the thickness direction by changing at least either a film-forming power or a reactive gas ratio.

Here the Examiner in the Examiner's Answer admits a silence with Saito of the sputtering method. And although Yamada arguably discloses the presence of a sputtering method throughout that reference, the Examiner's Answer is seemingly in agreement that on -- especially on pages 16 and 17 of the Examiner's Answer -- that the oxygen concentration being made different in a thickness direction -- different in a thickness direction of the oxygen film during a sputtering method is also absent from within Yamada.

Finally on page 14 of the Examiner's Answer, the Examiner admits that Kouchiyama fails -- and this is the Examiner's admission -- fails to disclose within the sputtering method of that reference the oxygen concentration of the inorganic resist layer being made different within a direction by changing either the film-forming power or the reactive ratio.

And in the absence of any substantial evidence, the reliance upon the combination of Yamada, Saito and Kouchiyama for the teaching of an oxygen concentration being made different in the thickness direction of an oxide during the sputtering method, we believe that this absence is the basis, also, of reversible error made by the Examiner rejecting these claims.

JUDGE PAK: Counsel, I have one question. Is there anywhere in your Brief indicating that the Saito does not teach that the oxygen concentration in the direction claimed, is there any part of the Brief that you made that --

MR. DUTTON: Well, we made that argument.

JUDGE PAK: Can you point to the page number, either generally or specifically?

MR. DUTTON: Generally, we did in multiple places as a matter of fact.

Let me see if I can direct you to some.

We, I guess on page 9, for example, in the middle of the page, we made that point about the failings in Saito, you know, about the oxygen concentration being increased towards the surface.

JUDGE HASTINGS: Right. But you say thus it fails to teach that. But before that, the only thing you argued was that it wasn't a transition metal.

You never said that -- you never -- in my recollection of reading your Briefs, you never explicitly said, therefore, the Examiner has not had a chance to respond to it, that the Examiner's finding was incorrect that this example 4 taught both ways, either increasing it or decreasing it.

And it appears ambiguous to me, but it does appear that there is some basis for his finding because it does talk about, as you said, selecting the high-frequency power and using it to continuously or stepwise vary at least one or more of the conditions, whereby the proportion X of oxygen in the film is reduced to a value of less than 1.

So, you know, I think it could be said in the Examiner's favor that this implies a gradient, same as it did the other way in that recording layer.

Then, though, as you point out, then it goes the other way again. So I don't know if this is talking about that it has two different layers, one of which it goes one way and then it flips around and goes the other way.

MR. DUTTON: Right, yeah. And again, we don't know whether or not they're referring to a gradient or what actually happens and what conditions are varied and what the resulting recording layer would be.

JUDGE HASTINGS: Right. But I think the point that Judge Pak is trying to get to as I was --

MR. DUTTON: Yes?

JUDGE HASTINGS: -- is this dispute has not been brought forth on the record prior to this hearing with this particular finding.

MR. DUTTON: Okay. And that point is noted.

JUDGE HASTINGS: Okay.

MR. DUTTON: Thank you. Thank you.

JUDGE PAK: Thank you for coming. We will consider your argument carefully.

MR. DUTTON: Thank you very much. Thank you for great questions too. That was excellent. Thank you.

(Whereupon, the proceedings at 1:28 p.m. were concluded.)